including multiplexers which can provide a data path for packets from each of the said ports to either of the others and which provide for bypassing of a port to which an active communication unit is not coupled.

13.   (New) A connecting unit according to claim 12 wherein each port transmits and receives control messages so as to determine the status of a communication unit to which the respective port is connected, the multiplexers being controlled by control logic responsive to the control messages.

14.   (New) A connecting unit according to claim 12 and disposed to increment a signal value representing identification numbering in accordance with the number of communication units to which the connecting unit is coupled and to increment a signal value representing an active unit count in accordance with signals indicating an operational state of each communication unit to which the connecting unit is coupled and to effect by way of the control messages the communication of said signal values from at least the second port.

15.   (New) A connecting unit for use in a system comprising a plurality of network communication units having a cascade connection including said connecting unit, the connecting unit having three ports consisting of a first, second and third port, each port of the connecting unit having lines for forwarding and receiving data packets and for forwarding and receiving control messages, and including control logic under the control of the control messages, the connecting unit providing a data path for packets

604440

from the first port to the third port and from the third port to the second and also from the second port to the first, the connecting unit forwarding to the third port packets received at the first port when said control logic indicates that an active communication unit is coupled to the third port and bypassing the third port when said control logic indicates that an active communication unit is not coupled to the third port.

16.   (New) A connecting unit according to claim 15 wherein the connecting unit includes multiplexers each of which is controllable by the control logic to direct packets received at a respective port to either one of the other two ports and to cause bypass of a port to which an active communication unit is not connected.

17.   (New) A connecting unit according to claim 16 wherein the control logic receives by way of the first port control messages indicating a identification number and provides from the second port control messages modified to indicate an increase in the identification number.

18.   (New) A connecting unit according to claim 15 wherein the control logic receives by way of the first port a count which represent a number of active communication units and provides from the second port a count which is incremented or not according as an active communication unit is coupled to the third port.

19.   (New) A system comprising at least three network communication units each of which has a cascade port and a multiplicity of other ports for the reception and forwarding of addressed data packets, and at least one connecting unit, each such

- 3 -

604440

connecting unit having a first, second and a third port each having lines for forwarding

and receiving data packets and for forwarding and receiving distinctive control messages,

wherein each communication unit is coupled by way of its cascade port to a respective

port of a connecting unit, whereby to form a ring connection constituted by a point-to-

point communication link between each communication unit and the next in the system

and wherein each connecting unit includes control logic for generating and receiving the

control messages and for controlling the connecting units to cause the data packets to

bypass a port of said connecting unit when an active communication unit is not coupled

to that port.

20.   (New) A system according to claim 19 wherein the connecting units

provide a data path for packets in each of two directions around the ring.

21.   (New) A system according to claim 19 wherein for each connecting unit

the control logic receives control messages indicating an identification number and to

provide control messages modified to indicate an increase in the identification number.

22.   (New) A system according to claim 19 wherein for each connecting unit

the control logic receives a count which represent a number of active communication

units and provides a count which is incremented by unity or not according as an active

communication unit is or is not coupled to the third port of the respective connecting unit.

23.   (New) A system according to claim 19 wherein each communication unit

accommodates an interface which is coupled to a single respective port of a connecting

604440

unit and provides for the communication of data packets between the respective

communication unit and the connecting unit having said respective port.

24.   (New) A system according to claim 23 wherein the interface provides for

the storage of a respective identification number.

25.   (New) A system according to claim 23 wherein said interface is a modular

unit removable from the respective communication unit.

26.   (New) A system according to claim 23 wherein for connecting a port of a

connecting unit to a port of another connecting unit there is provided a connecting cable

which co-operates with a signal state of said control messages to indicate which end of

the cable is connected to a respective one of said first and second ports.--

604440